

# Welcome!

Spring 2021 Newsletter Series

## Upcoming Events:

- **Graduate Student Meetings with Job Candidates (on Zoom)**

*Wed. May 5<sup>th</sup> 11:30 – 12:00:*  
[Dr. Malhotra](#)

*Fri. May 7<sup>th</sup> 9:30 – 10:00:*  
[Dr. Zhang](#)

*Mon. May 10<sup>th</sup> 2:00 – 2:30:*  
[Dr. Durán](#)

- **Job Candidate Seminars (on Zoom)**

*Tues. May 4<sup>th</sup> 12:30 – 2:00:*  
[Dr. Malhotra](#)

*Thurs. May 6<sup>th</sup> 10:30 – 12:00:*  
[Dr. Zhang](#)

*Mon. May 10<sup>th</sup> 10:30 – 12:00:*  
[Dr. Durán](#)

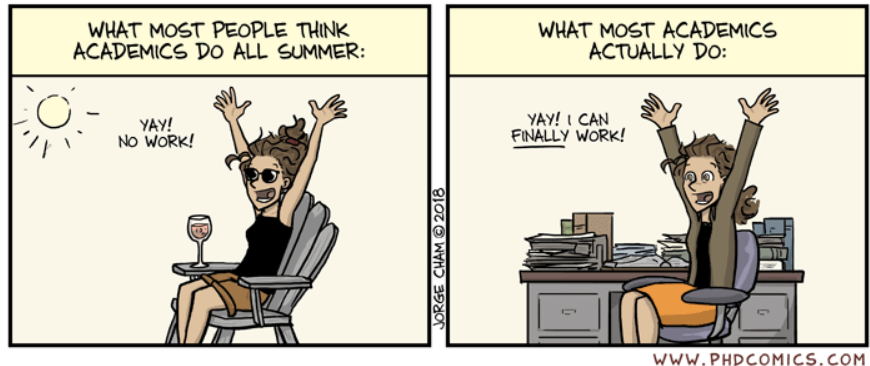


# ZoGSS Newsletter

## May 2021

Congratulations to ZoGSS on being selected as the CAS student organization of the year!! This is a testament to our members' flexibility and dedication in the midst of a very challenging year. Here's to a healthy and productive summer!

### SUMMER

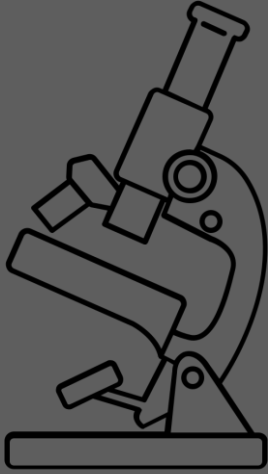


### Ecology Position Job Candidate Interviews

We are starting a series of candidate interviews for the Ecology position in our department. **Please see the side panel for dates and times for both the seminars and graduate student meetings.** You can click on each candidate's name to access their website and learn more about their research!

### 2021-2022 ZoGSS Officer Elections

If you are a dues-paying member and have not yet voted for next year's ZoGSS officers, make sure to do so! **Voting has been extended until this Friday, May 7<sup>th</sup> at 5:00 PM** and you should receive a reminder email with the ballot attached.



## Fundraising

### Raffle tickets on sale!

Don't forget to buy your raffle tickets before 5:00 PM on Wednesday, May 5<sup>th</sup>! You can buy one ticket for \$5 or get three tickets and a free pint glass for \$10! Tickets can be purchased from Shauni ([shauni.dna.windle@okstate.edu](mailto:shauni.dna.windle@okstate.edu)).

See the flyer below for details about the prizes you could win.

### ZOGSS SPRING RAFFLE

<ul style="list-style-type: none"> <li>• <b>Basket 1</b></li> <li>• Osteology Museum Admission for 2</li> <li>• Thai Loco Dinner for 2</li> <li>• Blue Spruce Coffee</li> <li>• Integrative Biology Nike Cap</li> <li>• Iron Monk Tshirt</li> <li>• Integrative Biology Sticker</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Basket 2</b></li> <li>• Factory Obscura Admission for 2</li> <li>• Louie's \$20 Gift Card</li> <li>• Blue Spruce \$25 Gift Card</li> <li>• Bad Brad's Nachos Voucher</li> <li>• Iron Monk Glass and Sticker</li> <li>• Integrative Biology Sticker</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Basket 3</b></li> <li>• Iron Monk Tour for 4</li> <li>• Thai Loco Dinner for 2</li> <li>• Bad Brad's Nachos Voucher</li> <li>• District Bike Item Shirt</li> <li>• \$25 Simplicity and Co. Gift Card</li> <li>• Integrative Biology Sticker</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Basket 4</b></li> <li>• Woodchuck Axe Throwing Voucher (4)</li> <li>• Louie's \$20 Gift Card</li> <li>• Brown's \$50 Gift Card</li> <li>• District Bike Hat</li> <li>• \$25 Simplicity and Co. Gift Card</li> <li>• Integrative Biology Sticker</li> </ul>	<p style="color: green;"><b>Tickets \$5 for 1 &amp; \$10 for 3</b></p> <p style="color: green;"><b>Free Pint Glass with the purchase of 3+ tickets!!</b></p> <p>Contact <a href="mailto:Shauni.dna.windle@okstate.edu">Shauni.dna.windle@okstate.edu</a></p>

### Caps are still on sale for \$20 each!

Contact Shauni ([shauni.dna.windle@okstate.edu](mailto:shauni.dna.windle@okstate.edu)) for purchase.



Shauni Windle



*Merchandise links will be up on the departmental website for purchase in the future.*

Outreach GroupMe



## Expanding Your Horizons STEM Conference

Victoria Roper– along with many other graduate students and faculty at OSU – is involved in planning a conference focused on maintaining STEM interest in middle school girls. This conference already exists in 11 other states, and now they are working to bring it to Oklahoma! Click this [link](#) to learn more.

Reach out to Victoria ([victoria.roper@okstate.edu](mailto:victoria.roper@okstate.edu)) if you are interested in getting involved in a leadership position or as part of a subcommittee.

We would like to take the next few pages to recognize all of the recent award-winners among our peers!





## 1<sup>st</sup> Graduate Student Spotlight:

### Justin Agan – Wilks Award

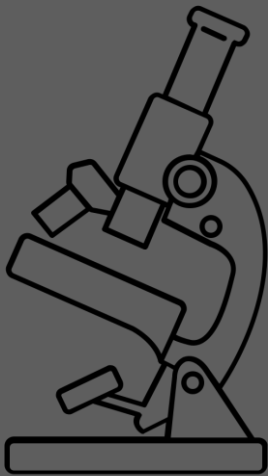
*Provided by the Southwestern Association of Naturalists (SWAN), the Wilks Award is presented to the student who gives the best oral presentation at the annual meeting. Students submit a written summary of their research ahead of time to be considered for the award, and a judging panel selects up to 6 finalists to present their research during the plenary session.*



### **How juvenile sexually dimorphic traits impact intrasexual interactions and fitness in the collared lizard (*Crotaphytus collaris*)**

*Crotaphytus collaris*, collared lizards, express a juvenile sexual dimorphism that is lost upon reaching sexual maturation, which is rare among sexually dimorphic animals. Males develop dorsolateral juvenile orange bars (JOB) that peak in brightness prior to sexual maturity and disappear upon becoming sexually mature. Traditionally, sexual dimorphisms have a direct impact on the fitness of the individual by being used to secure matings, but how would dimorphic traits be adaptive in pre-reproductive individuals? We experimentally modified JOB and aggression of males in the field to understand how JOB and aggression are impacting intrasexual social behavior and to see if JOB affect fitness of juveniles. We found that JOB function as a receiver-dependent trait, meaning that the brightness of the bars, in accordance with aggression, was being socially mediated by the signal receiver. Receivers were found to retaliate against lizards who acted outside of the expected bounds of their signal. While this affected individual social interactions, it had no impact on the survivorship of the lizards. However, and most importantly, lizards with enhanced JOB ultimately produced significantly more offspring once they matured than lizards without enhanced JOB.





## 2<sup>nd</sup> Graduate Student Spotlight:

### Md Ibrahim – Robberson Summer Dissertation Award

*Provided by the OSU Graduate College, this award “supports summer research for outstanding post-candidacy, doctoral students from any disciplinary or interdisciplinary program.”*



#### **Measurements of toxicity, bioavailability, and bio-reactivity of Ag - Cu mixtures in the rainbow trout gut cell line (RTgutGC)**

In comparison to the toxicological studies done on the effect of a single metal, there are only few studies that investigated the effects of metal mixtures in animals. Existing models that predict the toxicity of metals in aquatic systems consider only one metal at a time in the prediction, but in nature, metals are mostly present in mixtures. One of the major limitations of developing models for metal mixtures is that we still do not have sufficient data about the effects of metal mixtures on biota. Therefore, in this study, I will investigate the toxicity, bio-availability (accumulation), and bio-reactivity (metal responsive gene expressions) of silver and copper mixtures using the rainbow trout gut cell line (RTgutGC) system. We hypothesize an additive effect (i.e. that metal toxicity of one metal will be increased when other is added) when cells will be exposed to Ag and Cu mixtures. Effect concentrations (EC50) of Ag and Cu were previously determined using a cell viability test that simultaneously measures two endpoints: metabolic activity and cell membrane integrity. The combined exposures will be done by the toxic potency ratio. For example, to determine combined effects, EC25 of Ag + EC25 of Cu will be exposed together. Considering these two concentrations will cause death of 50% of cell population, other lower and upper concentrations will be adjusted to determine the combined EC50. After determining combined EC50, a no observed effect concentration (NOEC) will be determined for Ag-Cu mixture. Bio-availability (metal accumulation) and bio-reactivity (metal responsive gene expressions: metallothionein, ATP 7A, CTR1, DMT1, GR) will be determined by exposing cells at NOEC concentrations for 48 hours. Findings of this study will shed light on the combined toxicological effects of two metals (Ag and Cu) in fish.



**Please congratulate our other graduate college  
and GPSGA award recipients!**

**Ryan Koch** – Outstanding GTA

**Ashley Knoch** – 3<sup>rd</sup> Place in Technical Abstract Writing  
Contest, Spring 2021

**Congrats to the recipients of the 2021 Women's  
Faculty Council Student Research Award!**

**Sierra Williams** – Long-term implications of viral  
neuroinflammation on behavior

**Shauni Windle** – Effect of atrazine on the  
development of the native amphibian *Acris blanchardi*  
(Blanchard's cricket frog)

**And congratulations to our 2020-2021 ZoGSS  
Award Recipients!**

**ZoGSS Research Award**

Ryan Koch, Teri Cocke, & Bailee Augustino

**M.S. Science Communication & Outreach Award**

Jonathan Albers

**Ph.D. Science Communication & Outreach Award**

Angela Riley

**Lunchtime Seminar Winner**

Scott Goepner

**Margaret S. Ewing Outstanding Mentor Award**

Dr. Elizabeth McCullagh





## Future Graduate Student Spotlights



There are so many amazing projects and activities our graduate students are involved in, it's hard for me to keep track of them all!

If you or one of your peers receives an awesome award, gets a publication, or does something else really cool and you think they deserve to be highlighted for their accomplishment, **please reach out to me** ([danielle.kirsch@okstate.edu](mailto:danielle.kirsch@okstate.edu)) **and let me know!** Faculty are welcome to nominate their students too!



*Don't forget to join our Facebook page "OSU Zoology Graduate Student Society" for more day-to-day updates.*

## Contact Us

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### Executive Committee:

Austin Leone – *President*  
 James Erdmann – *Vice President*  
 Dani Kirsch – *Secretary*  
 Taylor Carlson – *Treasurer*

### Fundraising Committee:

Shauni Windle & Adriana Townsend

### Planning Committee:

Carrie Klase

### Seminar Committee:

Taylor Carlson

### Award Committee:

David Berman

### Technology Committee:

Emily Geest

### Graduate Committee:

Scott Goepner

### Lunchtime Seminars:

Jonathan Albers

### Faculty Council:

Ryan Koch, Sarah Hileman, &  
 Adriana Townsend

### GPSGA:

James Erdmann & Jonathan Albers

### Outreach Committee:

Teri Cocke, Emily Geest, & James  
 Erdmann

### Workshop Committee:

Angela Riley

## Meet Your Peers

**Baum lab** – David Berman, Teri Cocke, Eric Duell\*, Sarah Elzay, Emily Geest, Carrie Klase\*, Ashley Knoch, Tyler Spresser\*

**Belden lab** – Sarah Hileman, Carrie Klase\*, Will Mimbs, Adriana Townsend, Ryan Grewe, Shauni Windle\*

**Bolek lab** – Ryan Koch, Ryan Shannon, Allison Bryant

**Bruck lab** – Rachel Hamrock\*, Paige Stevens\*

**Cabrera-Guzmán lab** – Taylor Carlson\*

**Dzialowski lab** – Bobby Bowser, Brian Eachus

**Fox lab** – Justin Agan, Taylor Carlson\*

**French lab** – Austin Leone, Kyley Moore

**Grindstaff lab** – Angela Riley, Sierra Williams, Victoria Roper

**Jeyasingh lab** – Yetkin Ipek

**Lovern lab** – Brooke Hoover, Jay Walton, Rachel Hamrock\*, Paige Stevens\*

**Luttbeg lab** – Scott Goepner, Dani Kirsch, Jamie Najjar

**McCullagh lab** – Racheal Brodsky, Amita Chawla

**McMurry lab** – Shauni Windle\*

**Minghetti lab** – MD Ibrahim, Justin Scott

**Moen lab** – Jack Spicer

**Reichert lab** – Jonathan Albers, Courtney Byrd, James Erdmann, Jain PK

**Van Den Bussche lab** – Denise Thompson

**Waldman lab** – Michael Ellison, Samantha Garza, Bailee Augustino, Sourjya Nath

**Wilder lab** – Jacob Reeves, Tyler Spresser\*, Colton Herzog

*\*indicates co-advised grad students*

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**ZoGSS serves as the representative organization and voice of the graduate student body of the Department of Integrative Biology at Oklahoma State University. Our mission is to provide professional and social opportunities for the graduate students in our department.**

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